

U.S. Patent

Sep. 2, 1997

Sheet 1 of 25

5,662,731

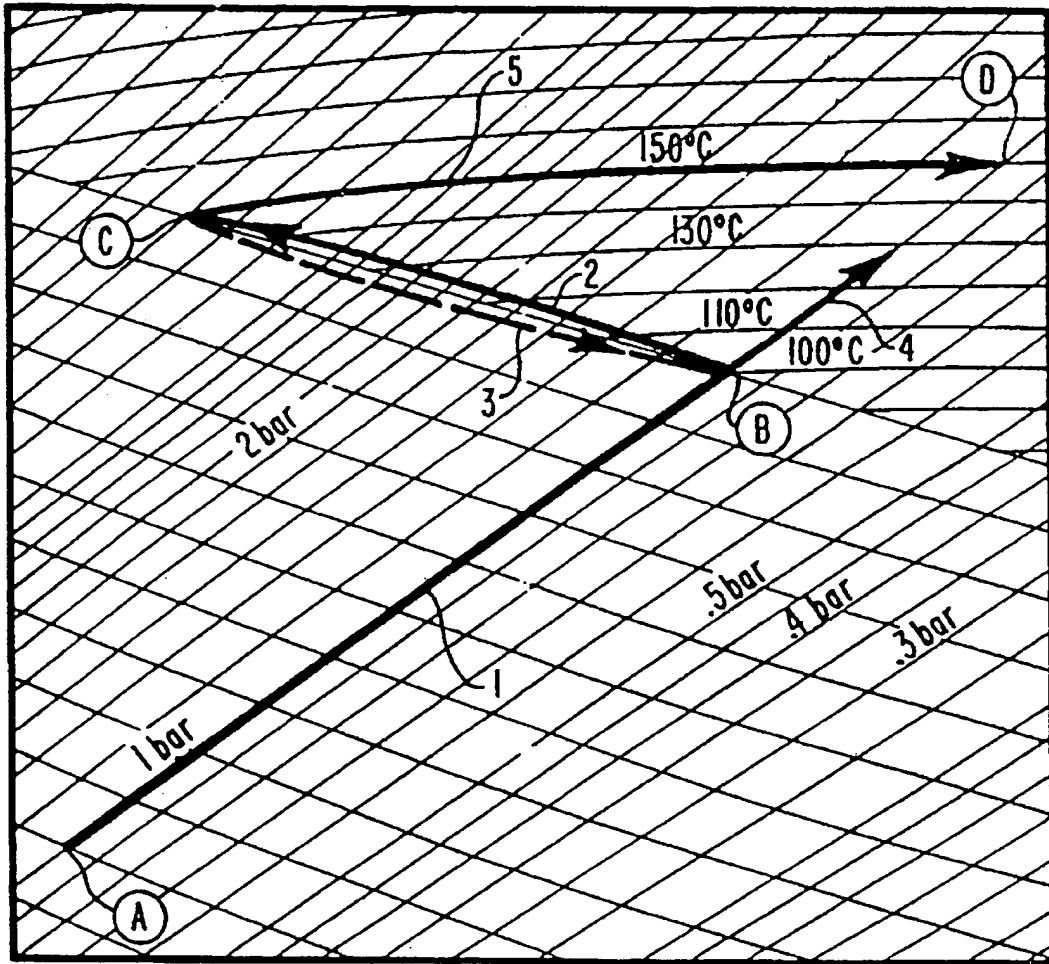


FIG. 1

U.S. Patent

Sep. 2, 1997

Sheet 2 of 25

5,662,731

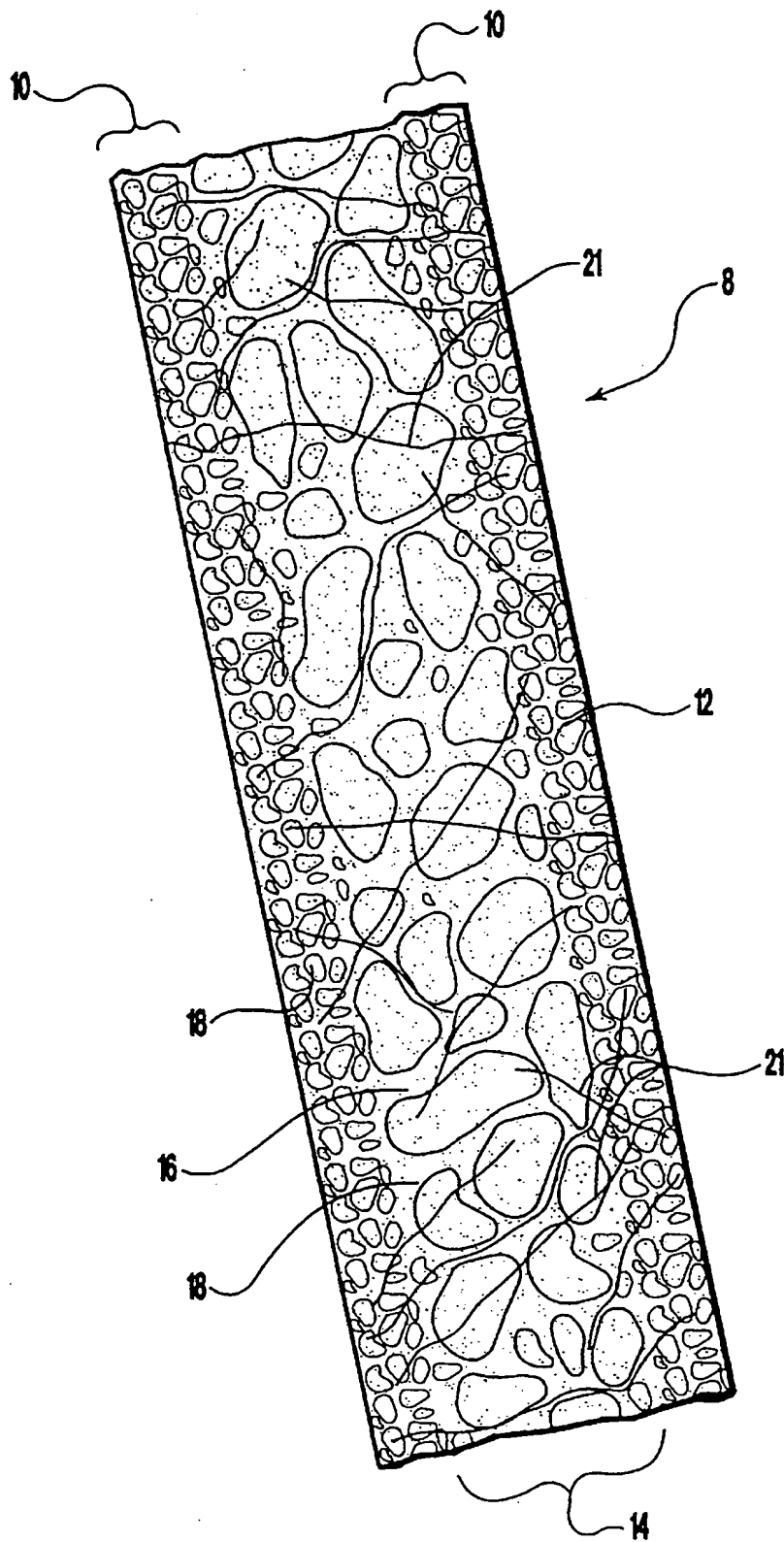


FIG. 2

662060" E850660



U.S. Patent

Sep. 2, 1997

Sheet 4 of 25

5,662,731

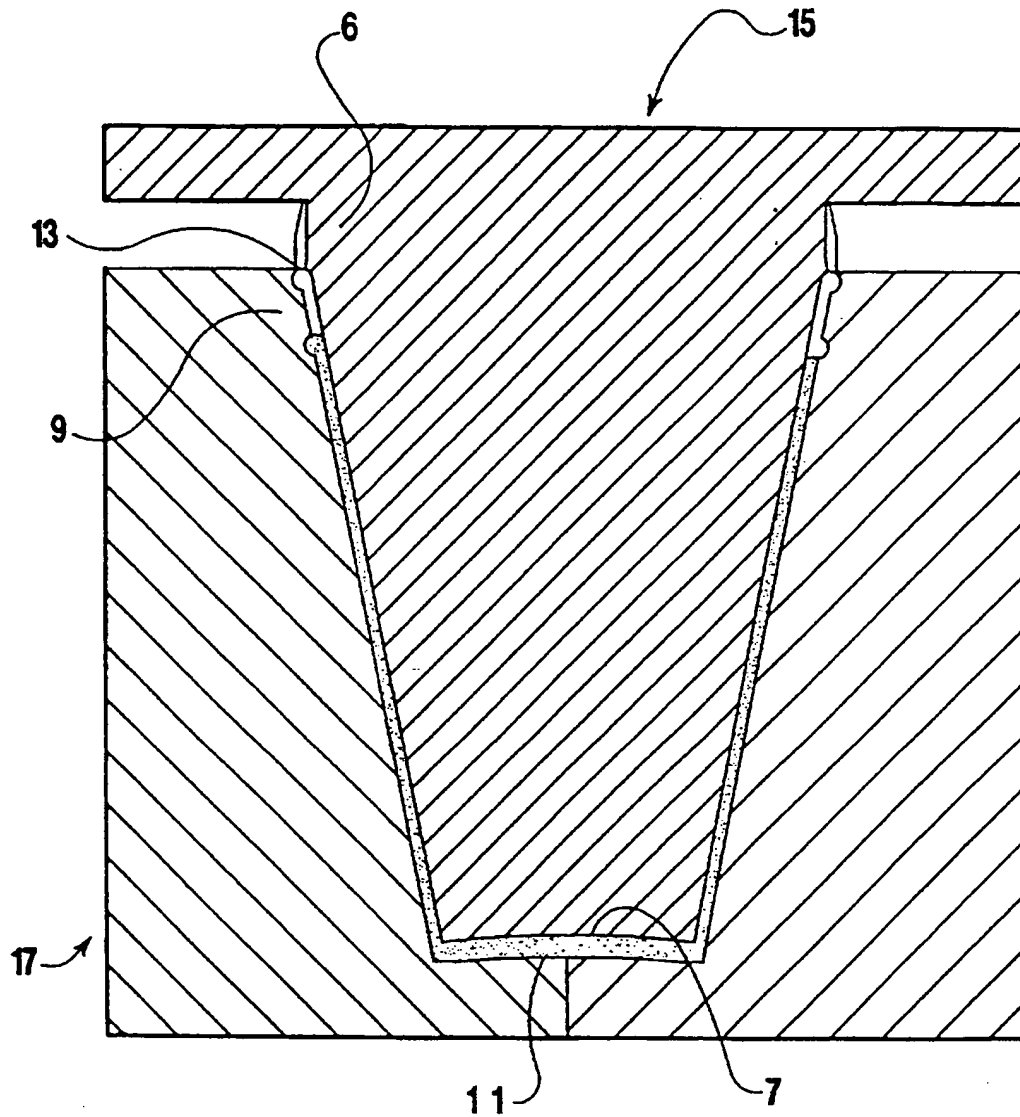


FIG. 3

662060-88506E60

U.S. Patent

Sep. 2, 1997

Sheet 5 of 25

5,662,731

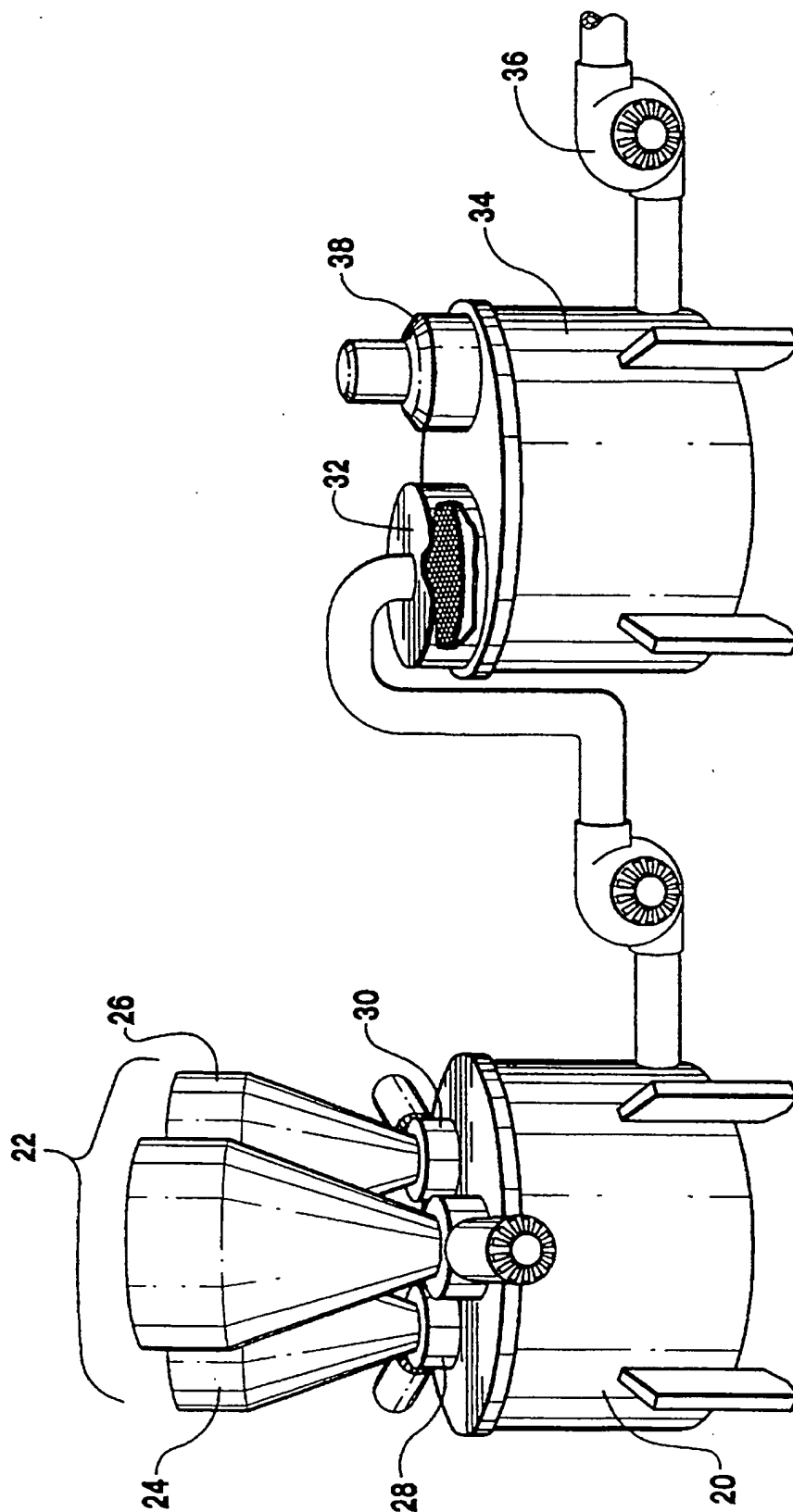


FIG. 4

662060-EB506E60

U.S. Patent

Sep. 2, 1997

Sheet 6 of 25

5,662,731

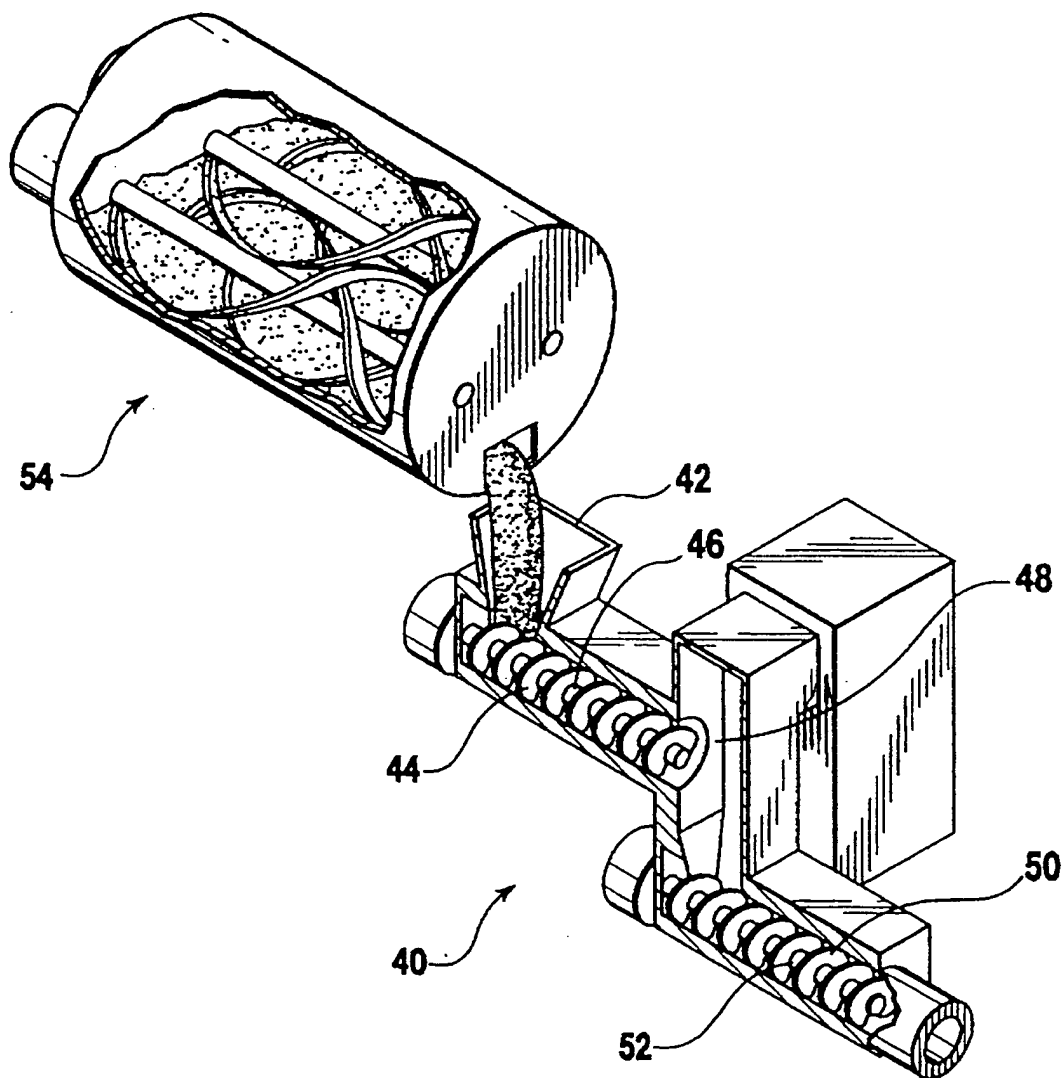


FIG. 5

09390583-090299

U.S. Patent

Sep. 2, 1997

Sheet 7 of 25

5,662,731

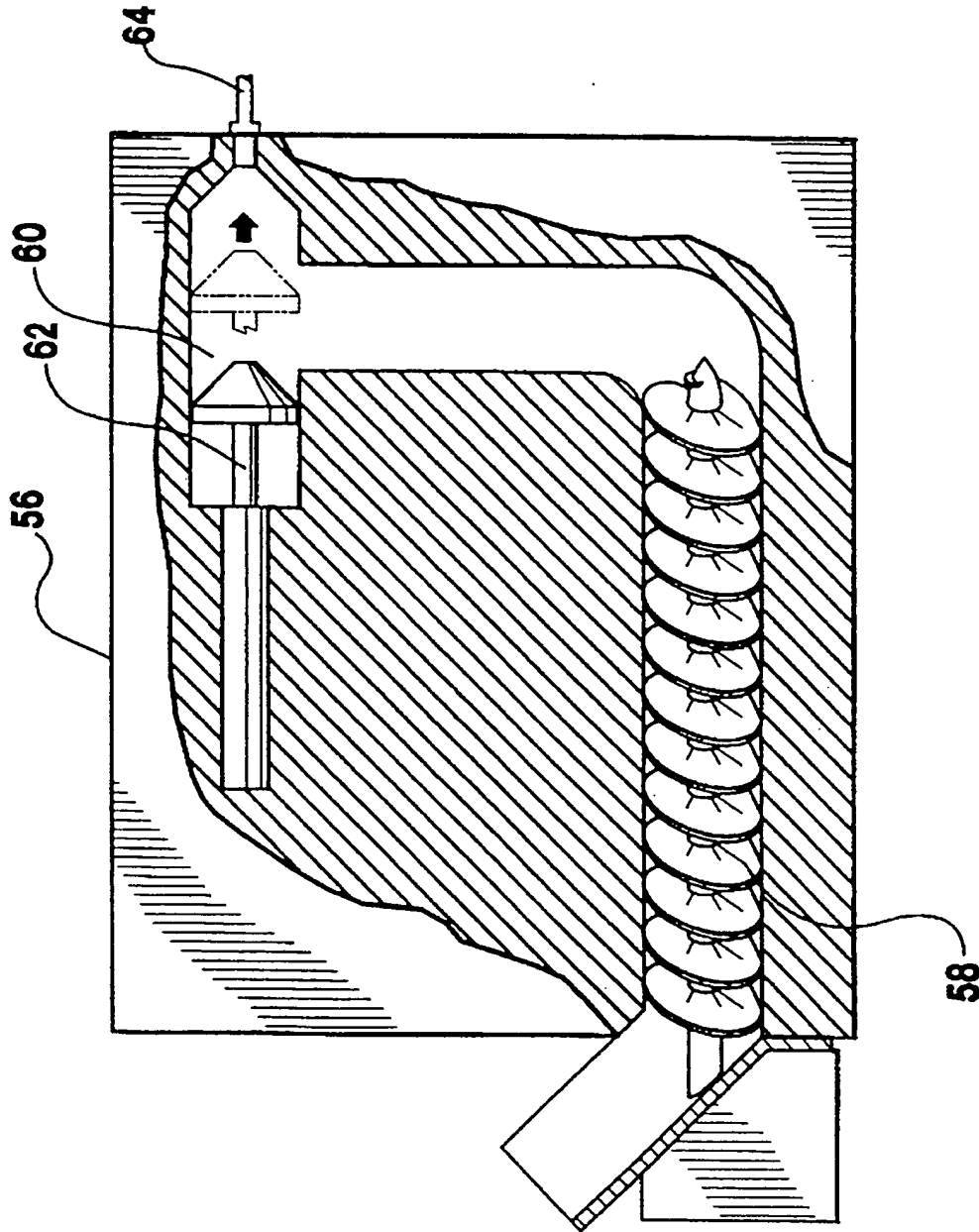


FIG. 6

662060" E8506E60

U.S. Patent

Sep. 2, 1997

Sheet 8 of 25

5,662,731

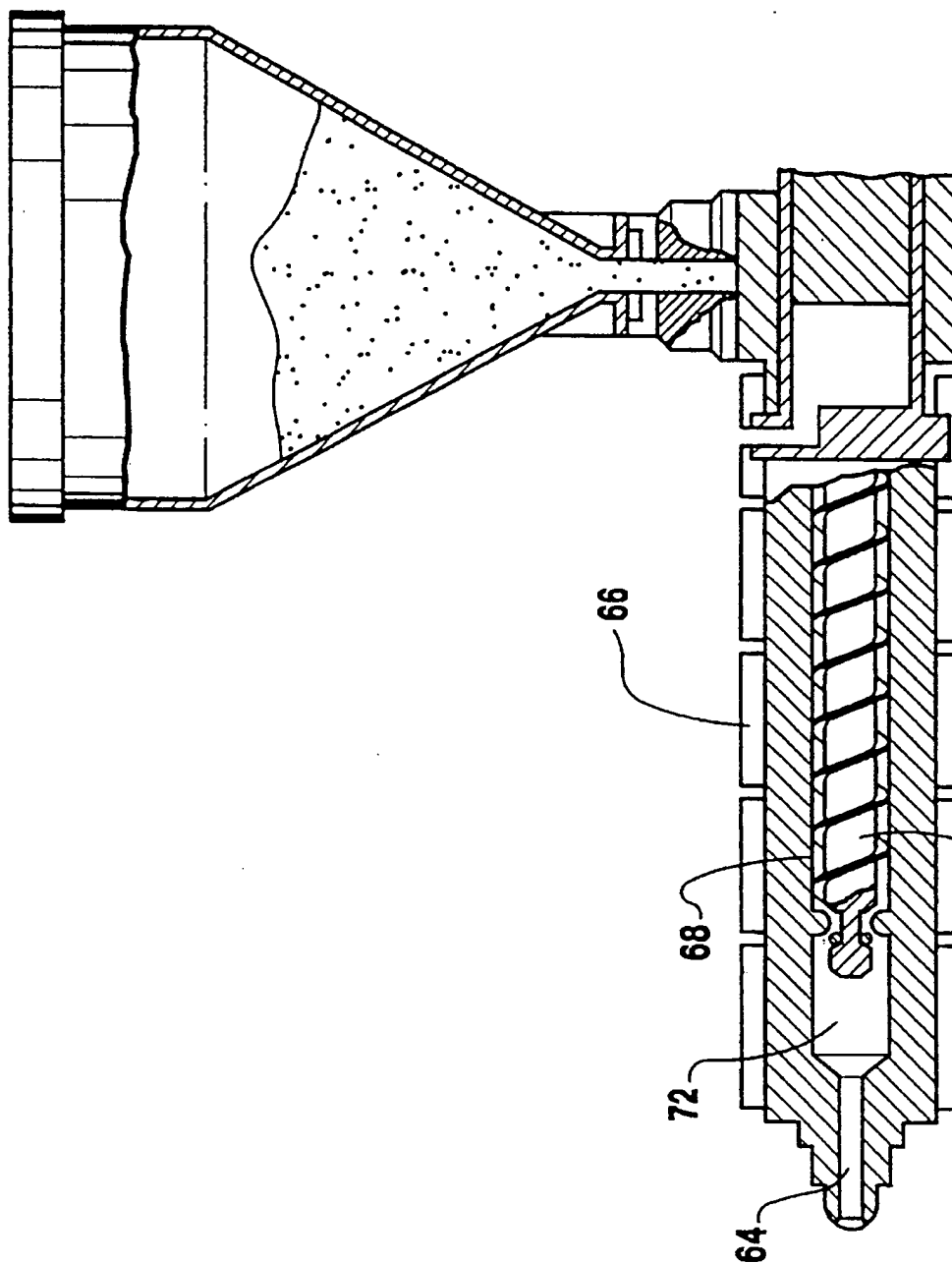


FIG. 7

662060" E8506E60



U.S. Patent

Sep. 2, 1997

Sheet 9 of 25

5,662,731

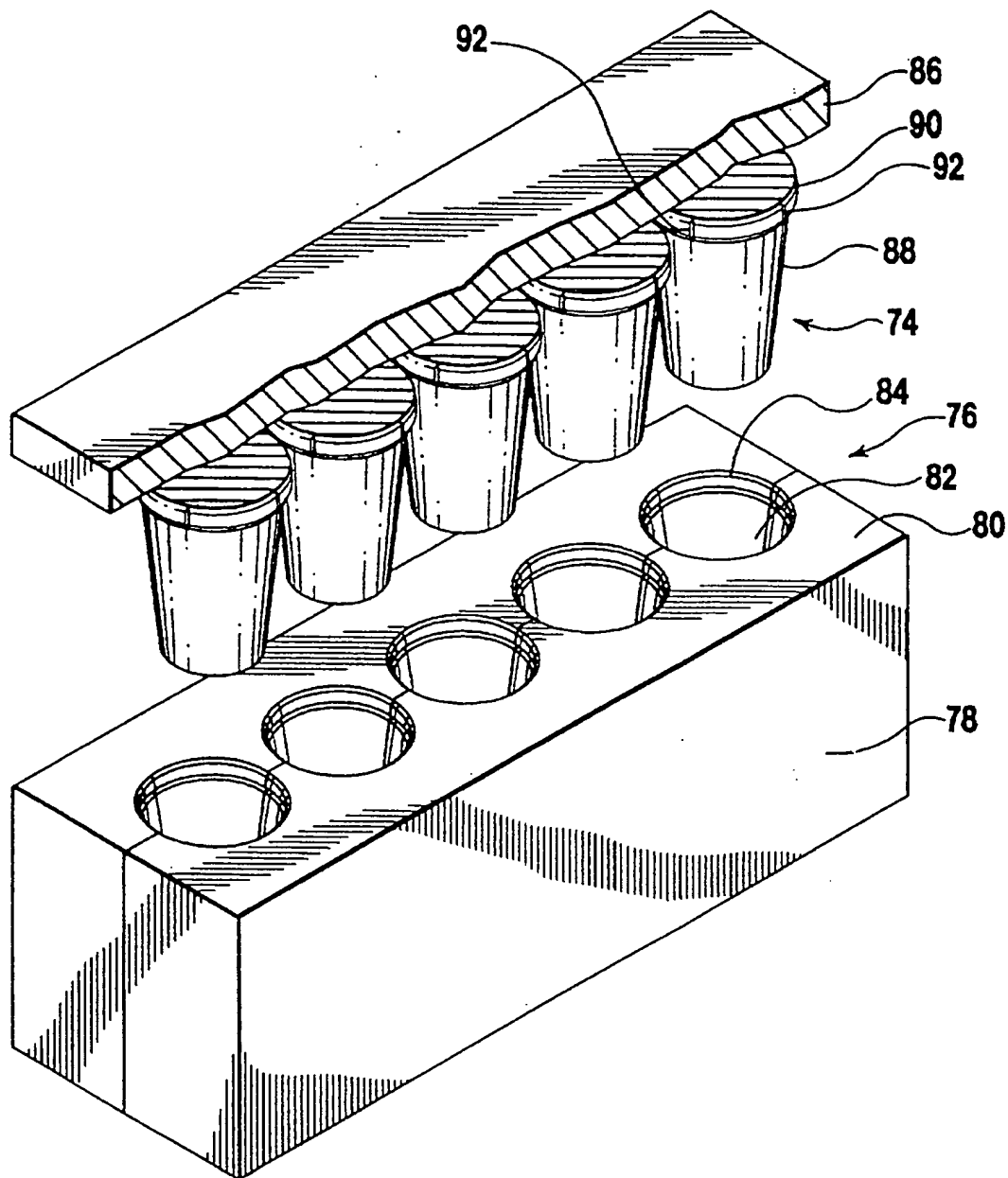


FIG. 8

662060-E8506E60

U.S. Patent

Sep. 2, 1997

Sheet 10 of 25

5,662,731

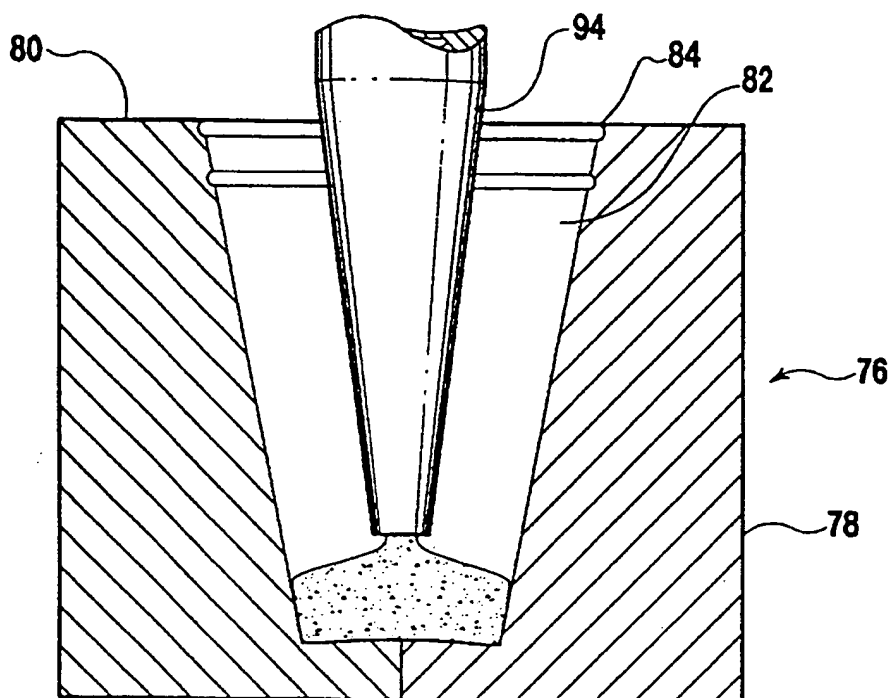


FIG. 9

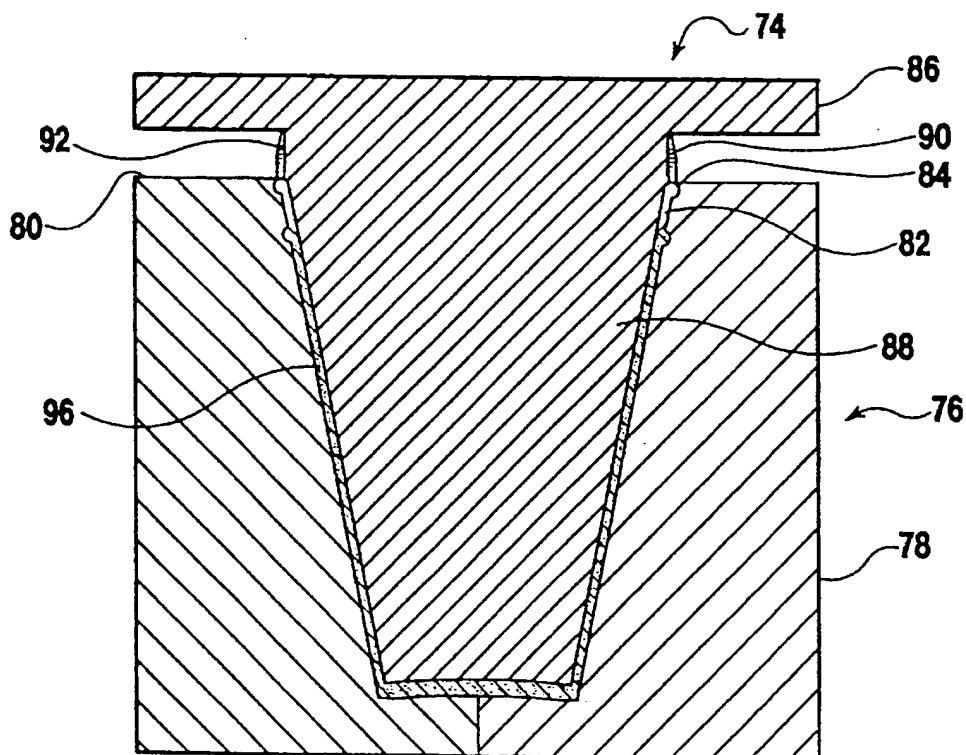


FIG. 10

662060" E8906E60

U.S. Patent

Sep. 2, 1997

Sheet 11 of 25

5,662,731

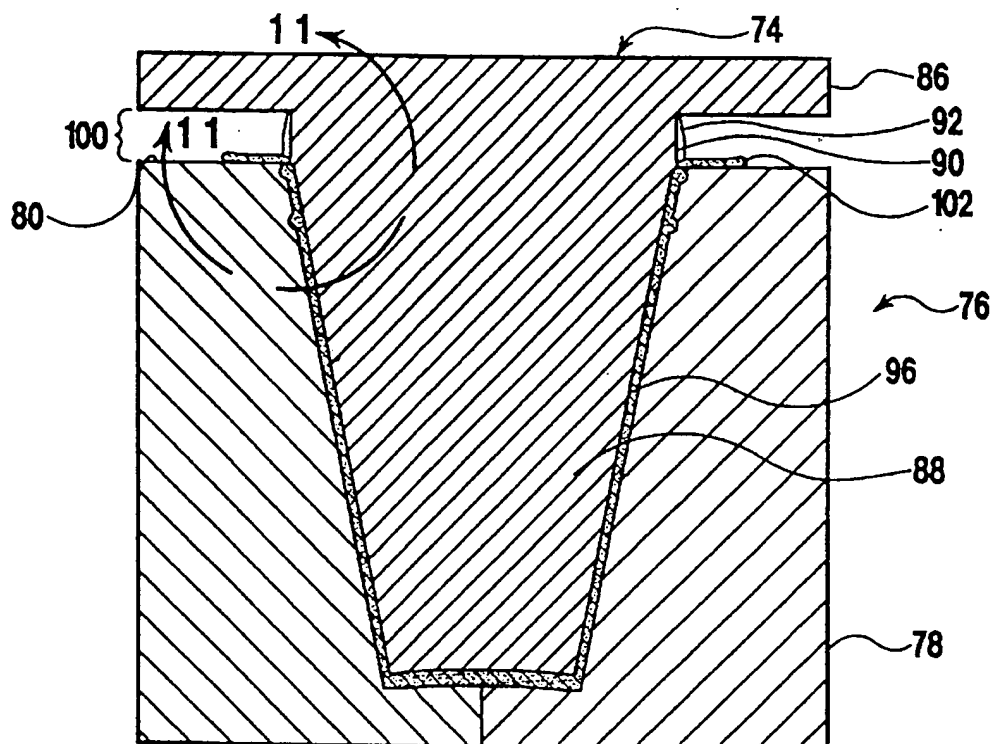


FIG. 11

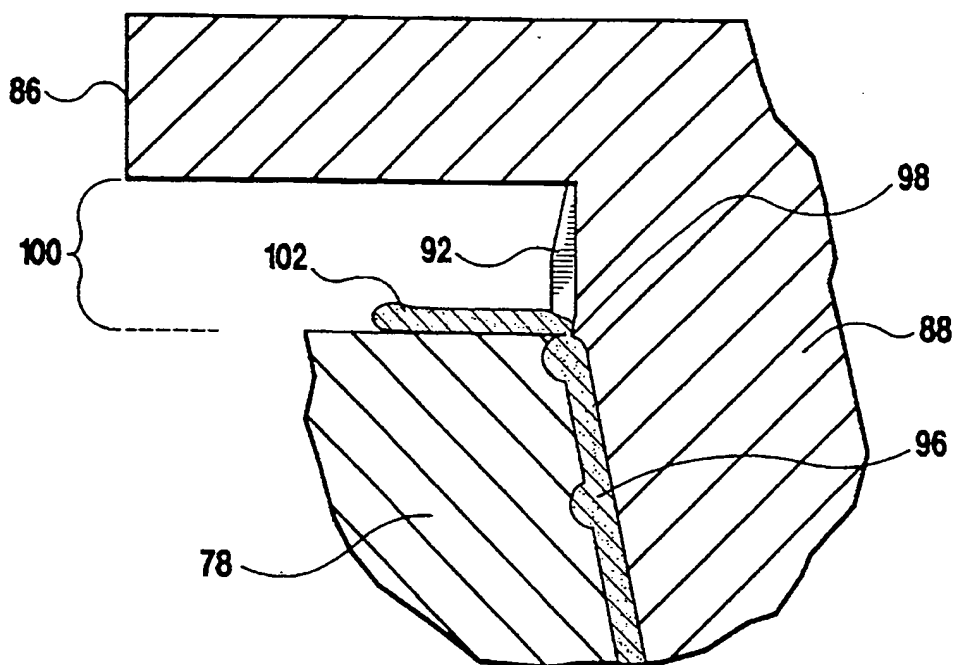


FIG. 11A

662060-E8506E60

00000000000000000000000000000000

U.S. Patent

Sep. 2, 1997

Sheet 13 of 25

5,662,731

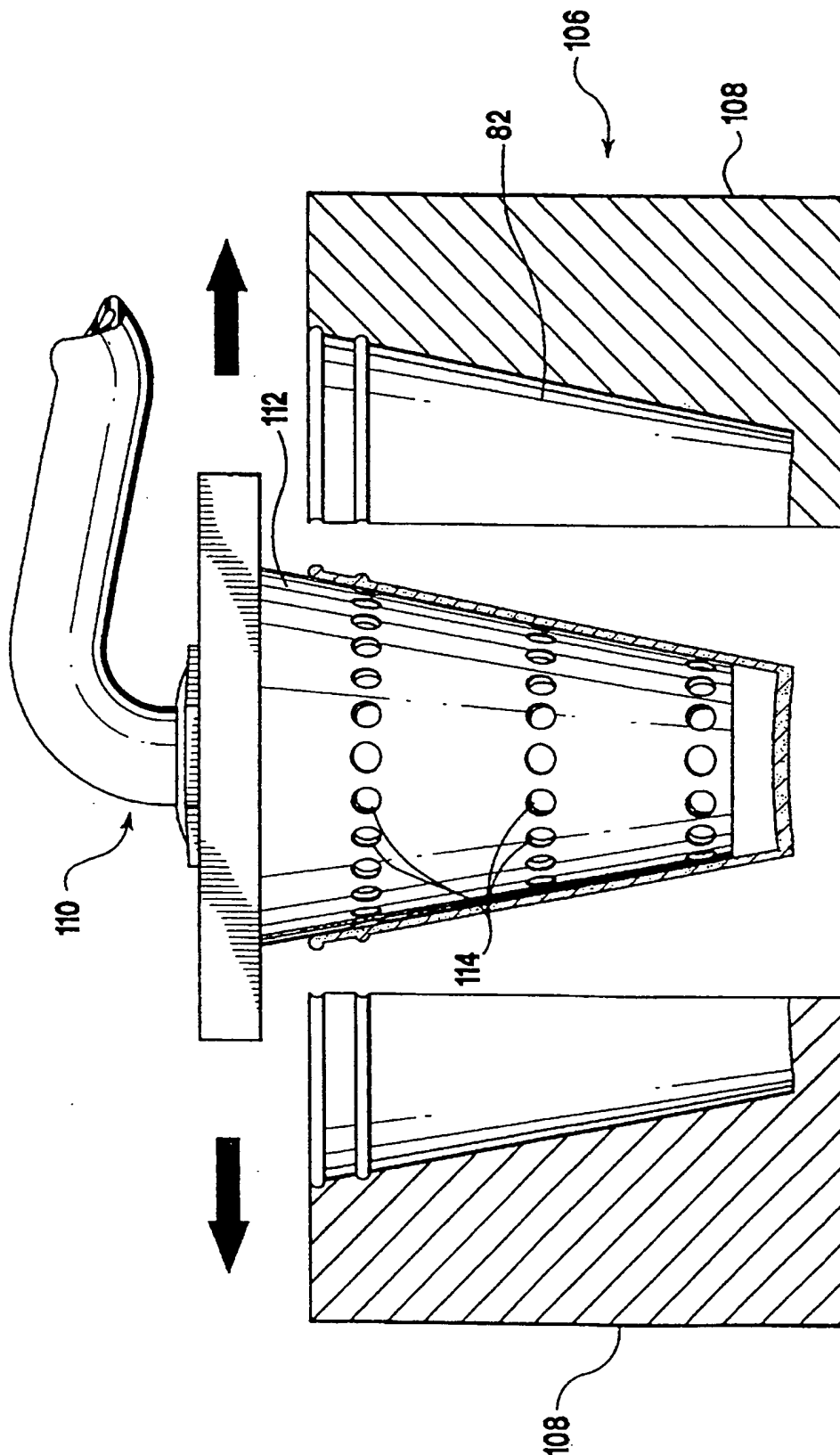


FIG. 14

U.S. Patent

Sep. 2, 1997

Sheet 14 of 25

5,662,731

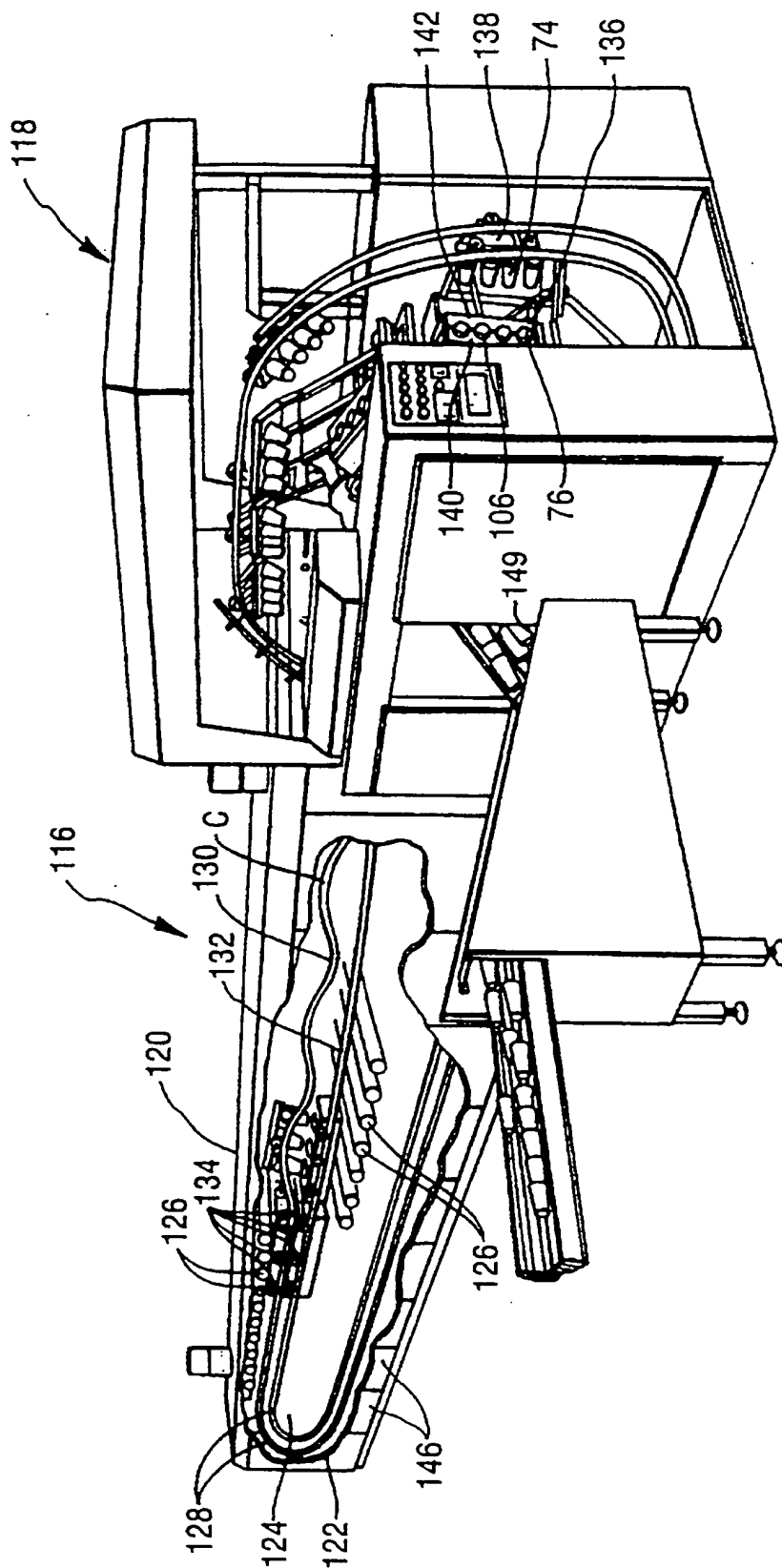


FIG. 15

562060" E8506E60

U.S. Patent

Sep. 2, 1997

Sheet 15 of 25

5,662,731

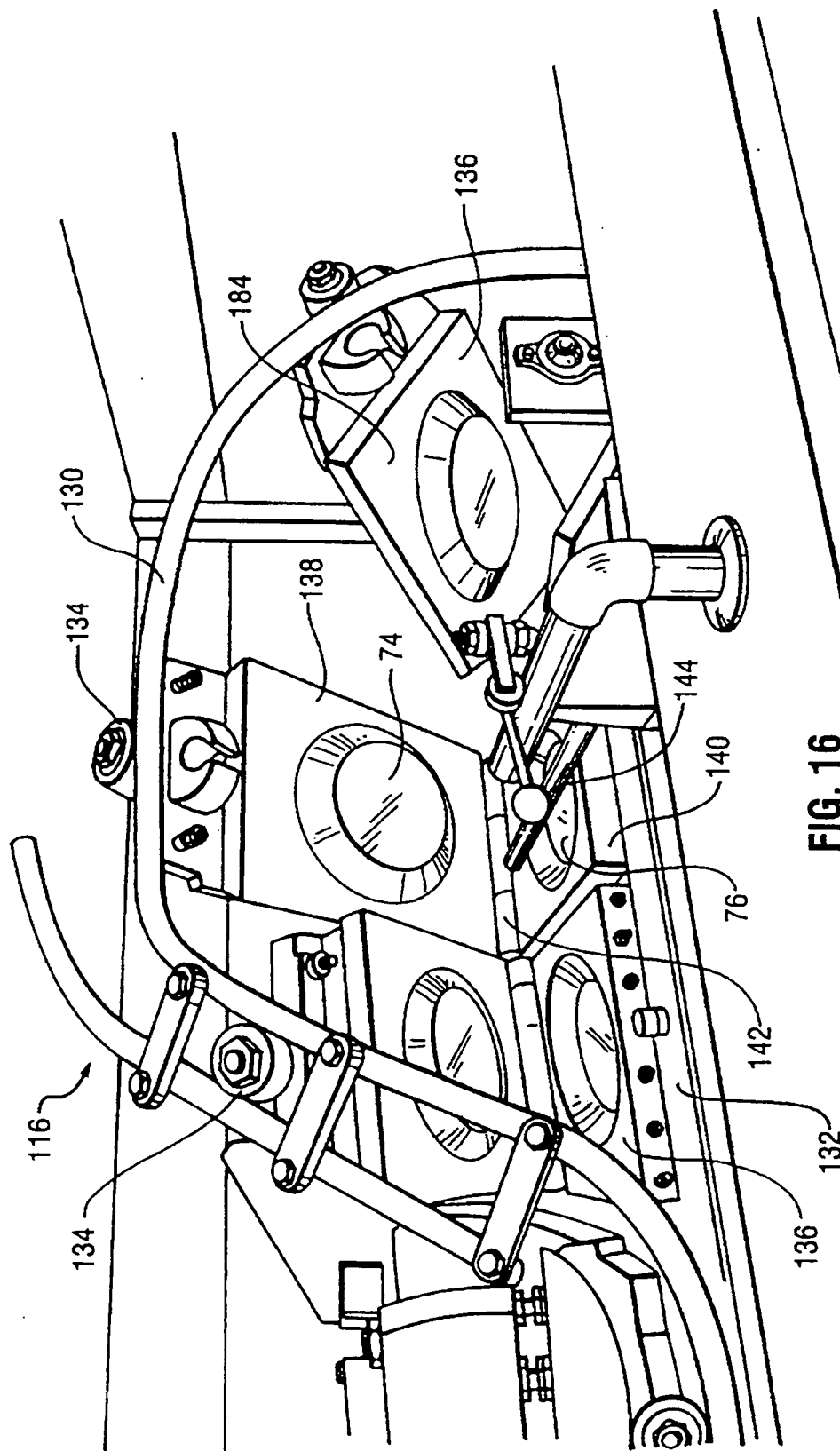


FIG. 16

662060" E3506E60

U.S. Patent

Sep. 2, 1997

Sheet 16 of 25

5,662,731

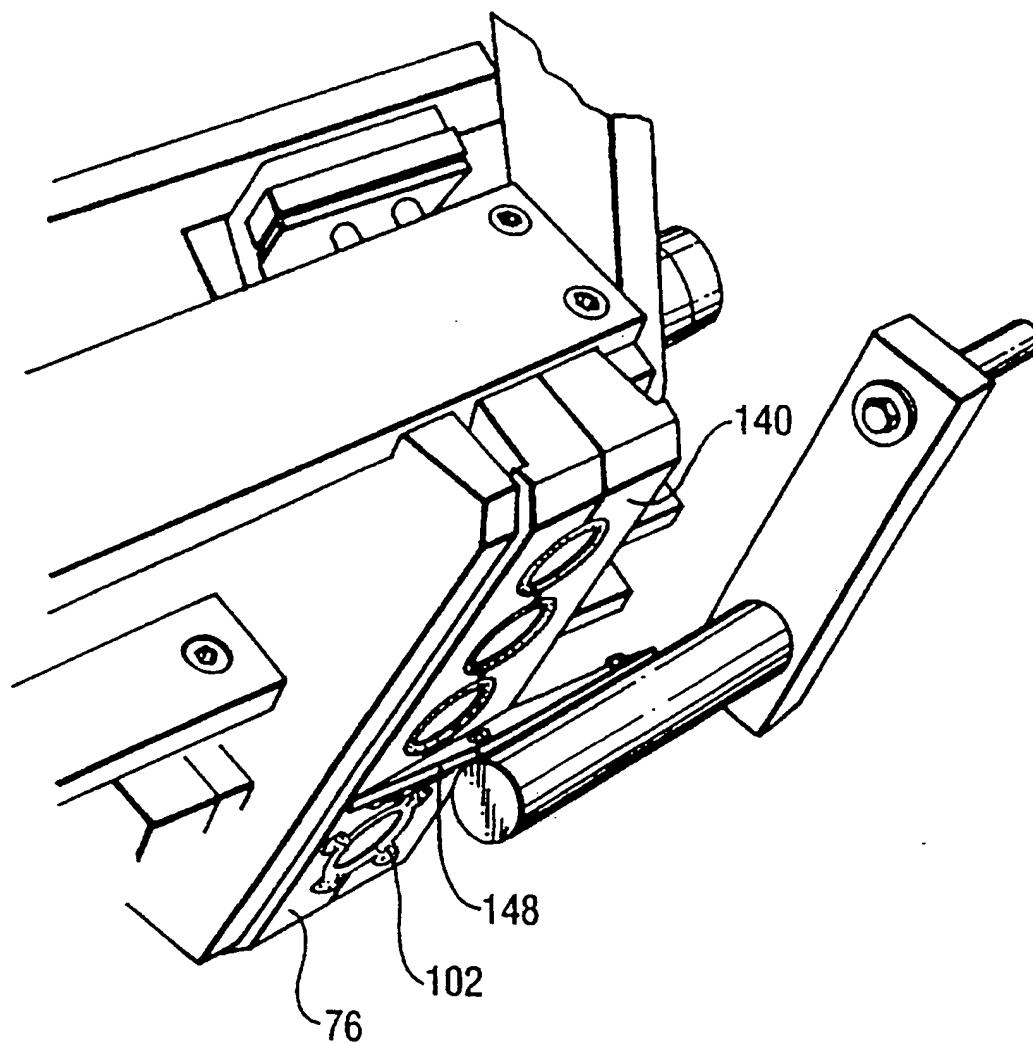


FIG. 17

662060-EB90660



U.S. Patent

Sep. 2, 1997

Sheet 17 of 25

5,662,731

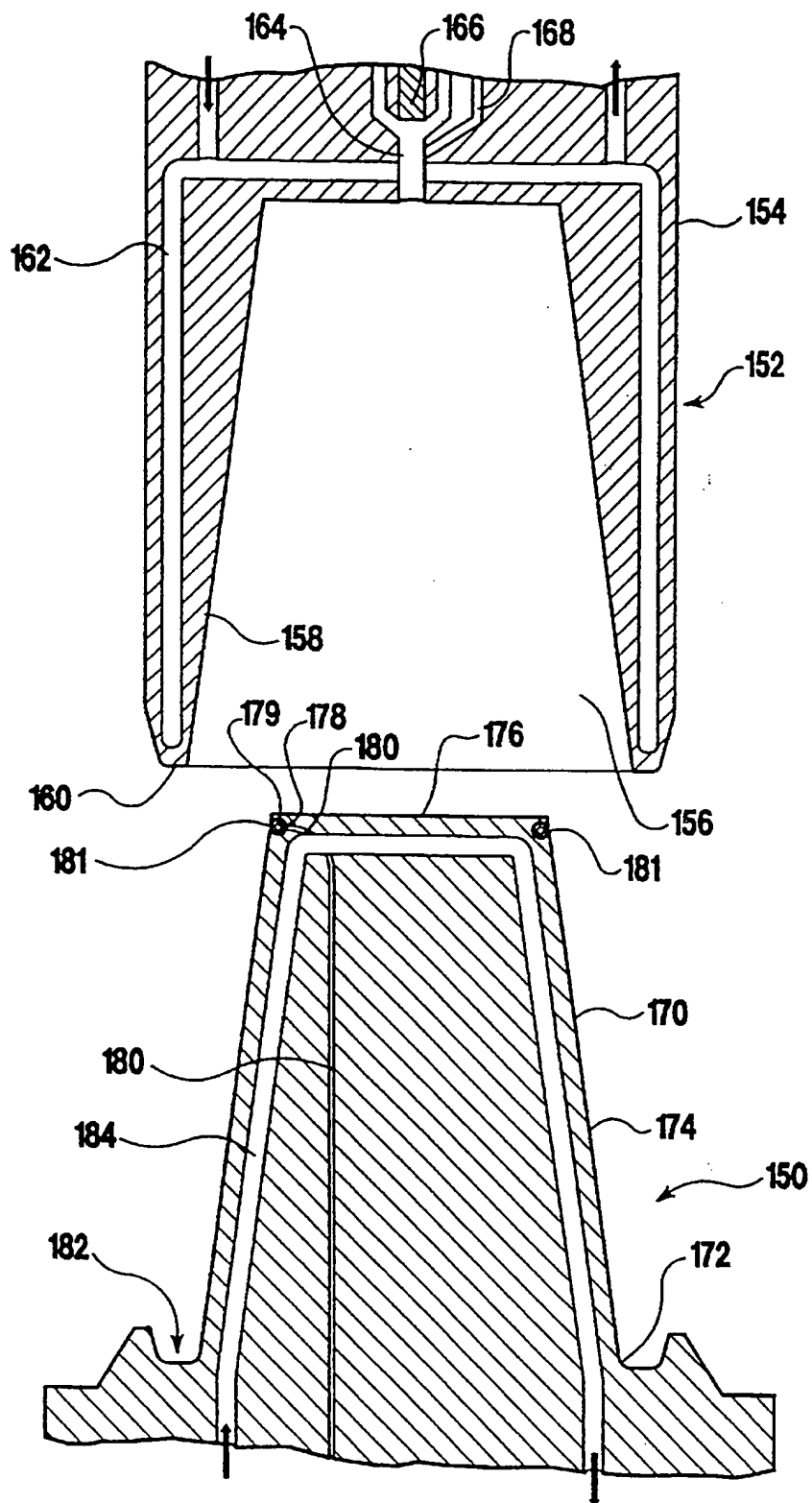


FIG. 18

662060" E8506E60

U.S. Patent

Sep. 2, 1997

Sheet 18 of 25

5,662,731

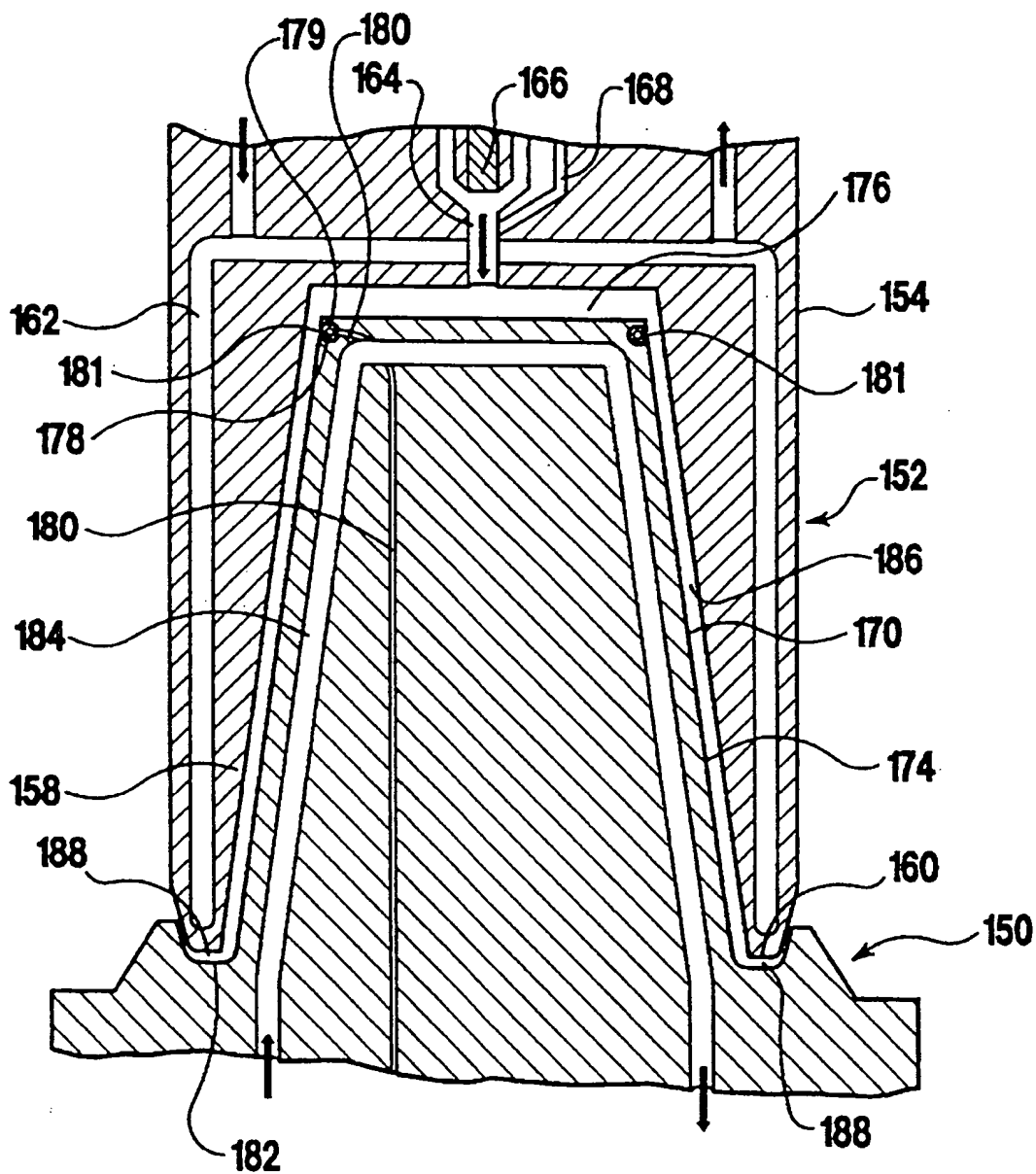


FIG. 19

662060-63506E60

U.S. Patent

Sep. 2, 1997

Sheet 19 of 25

5,662,731

100<sub>GS</sub>TARC M03, KP22  
CR FLOW CURVE  
—•—  $\tau$  STRESS  
—◇—  $\eta$  VISCOSITY

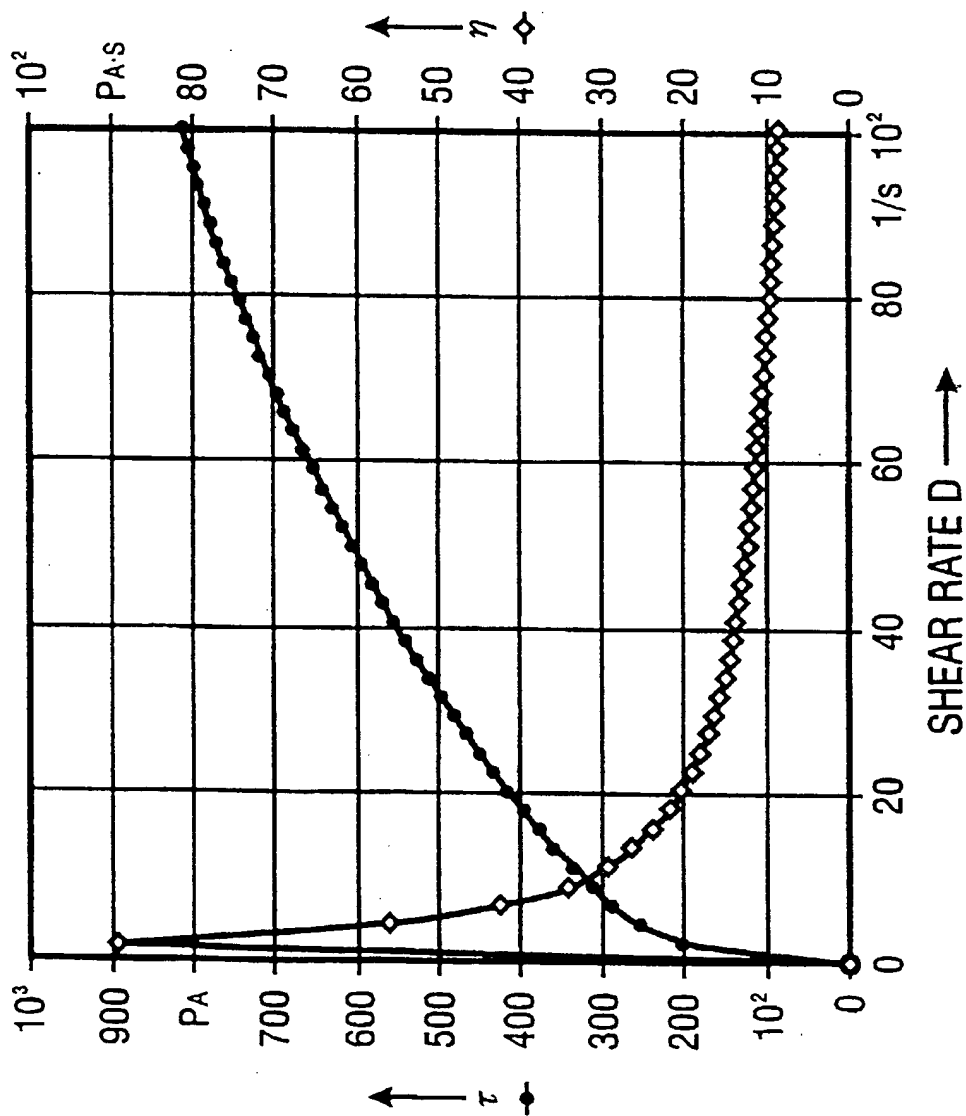


FIG. 20

U.S. Patent

Sep. 2, 1997

Sheet 20 of 25

5,662,731

50<sub>GS</sub>TARC M05, KP22  
CR FLOW CURVE  
—•—  $\tau$  STRESS  
—◇—  $\eta$  VISCOSITY

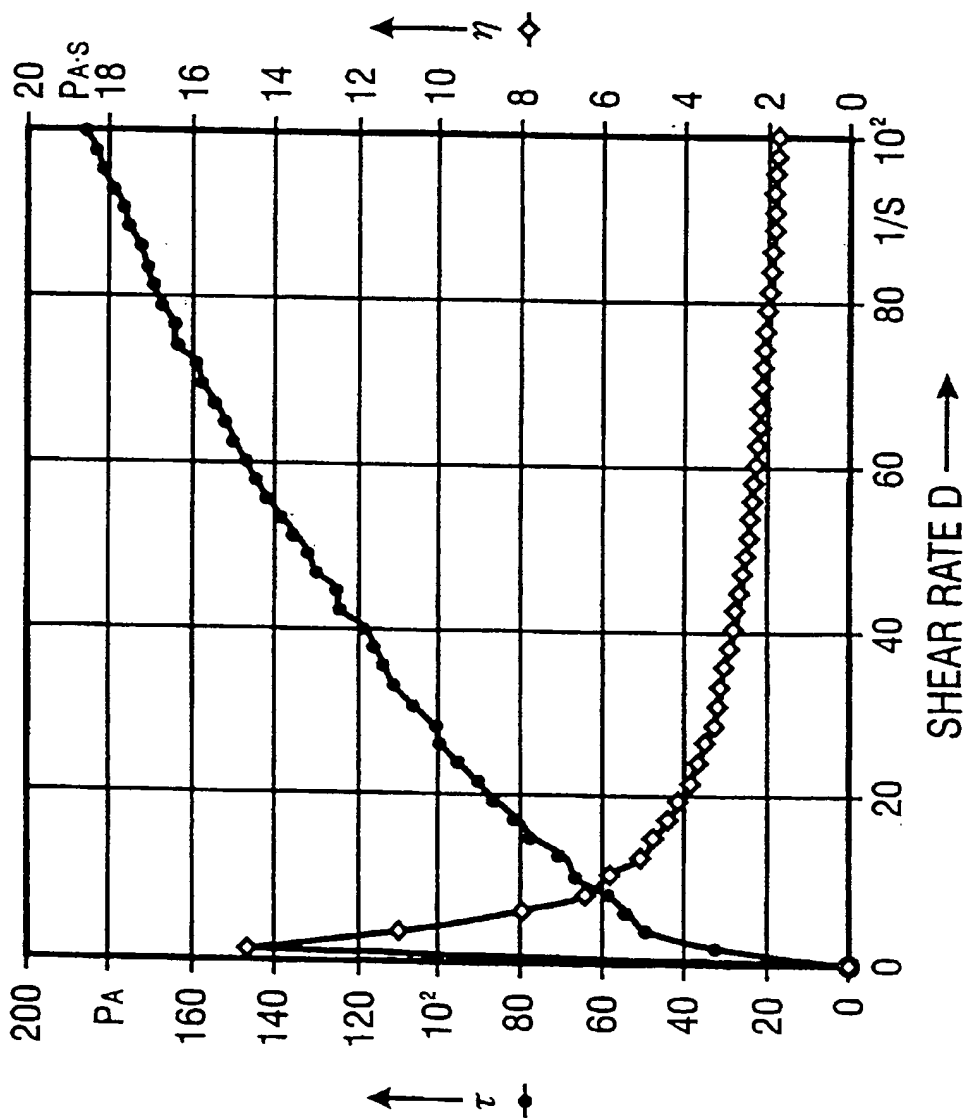


FIG. 21

662060-EB50660



U.S. Patent

Sep. 2, 1997

Sheet 22 of 25

5,662,731

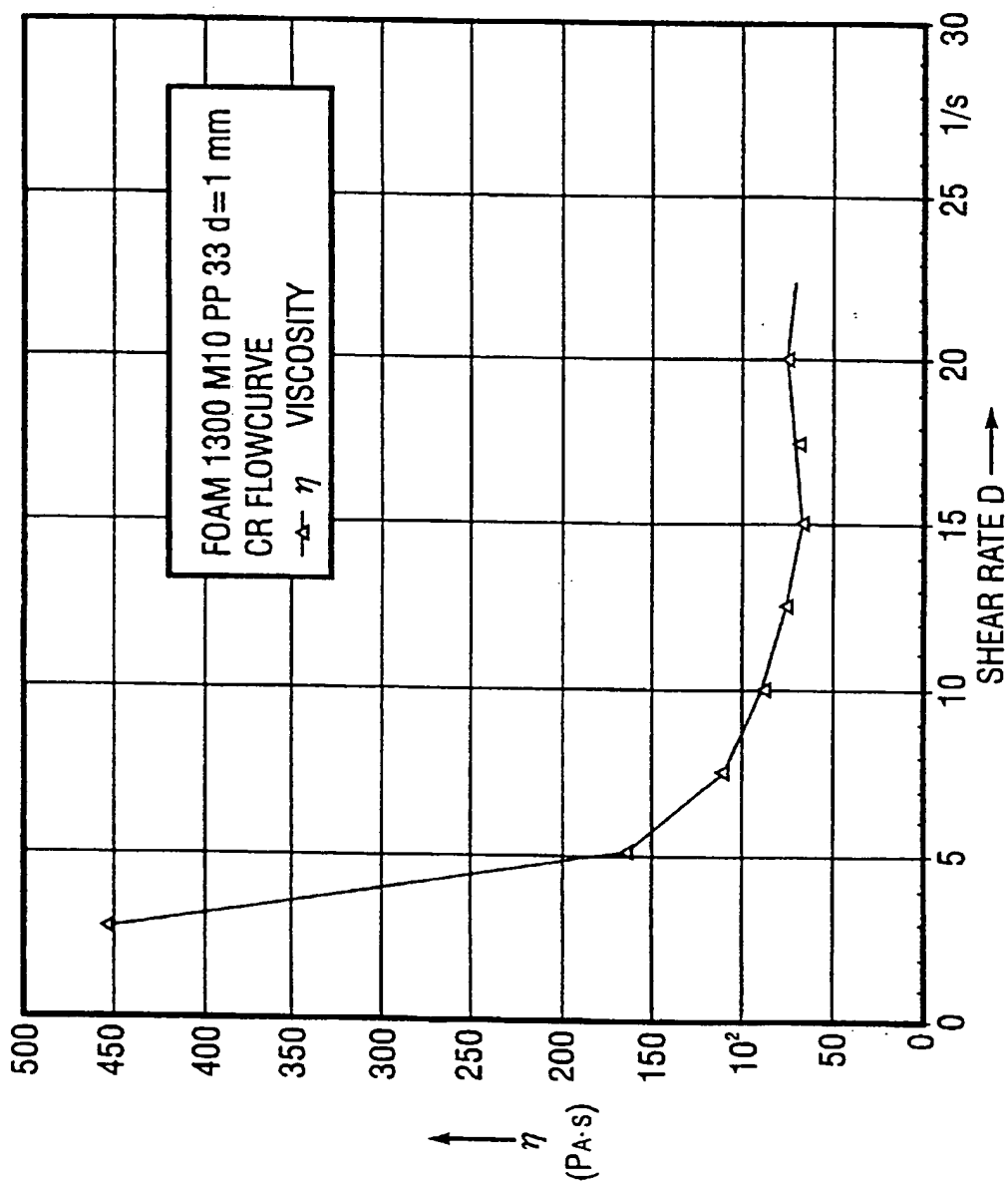


FIG. 24

U.S. Patent

Sep. 2, 1997

Sheet 23 of 25

5,662,731

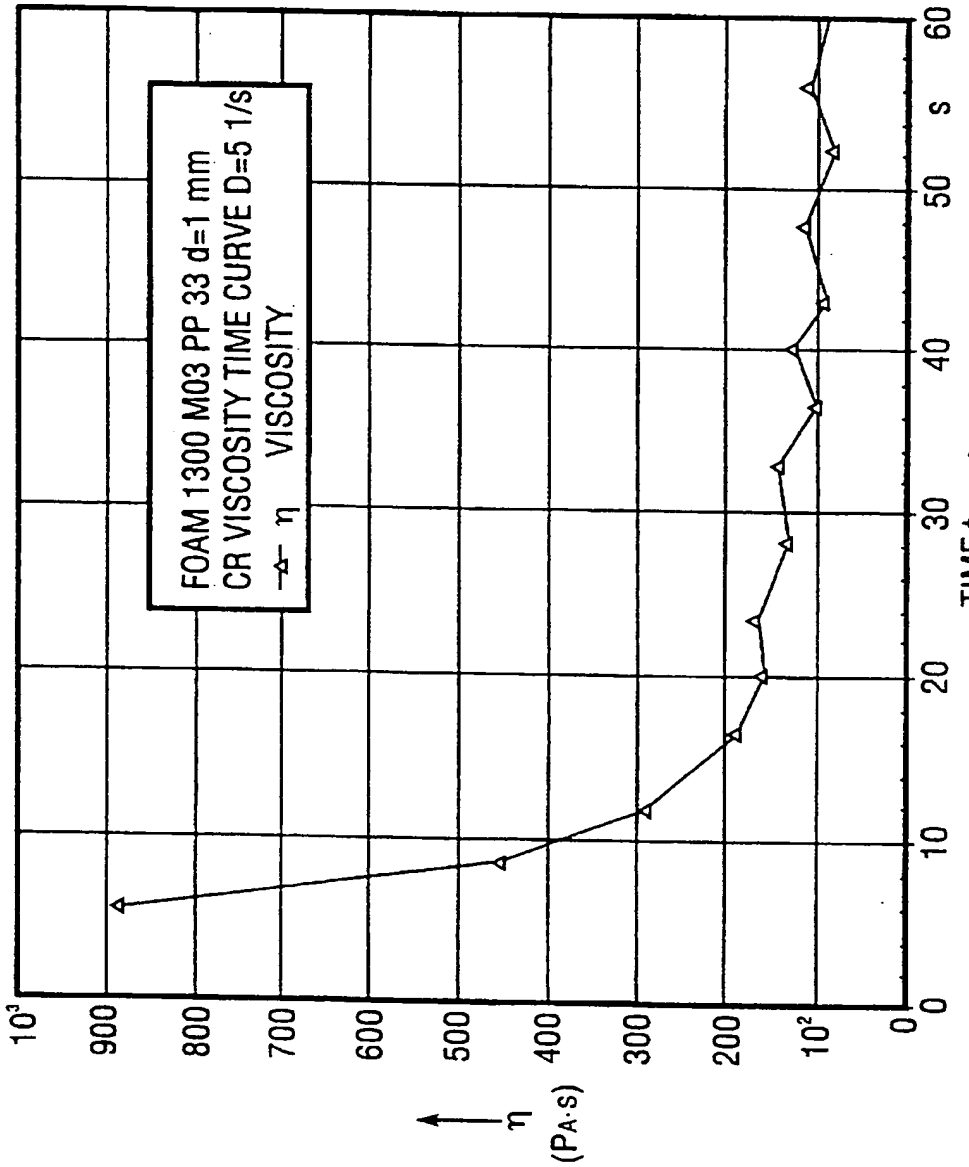


FIG. 25

652060" E3506E60

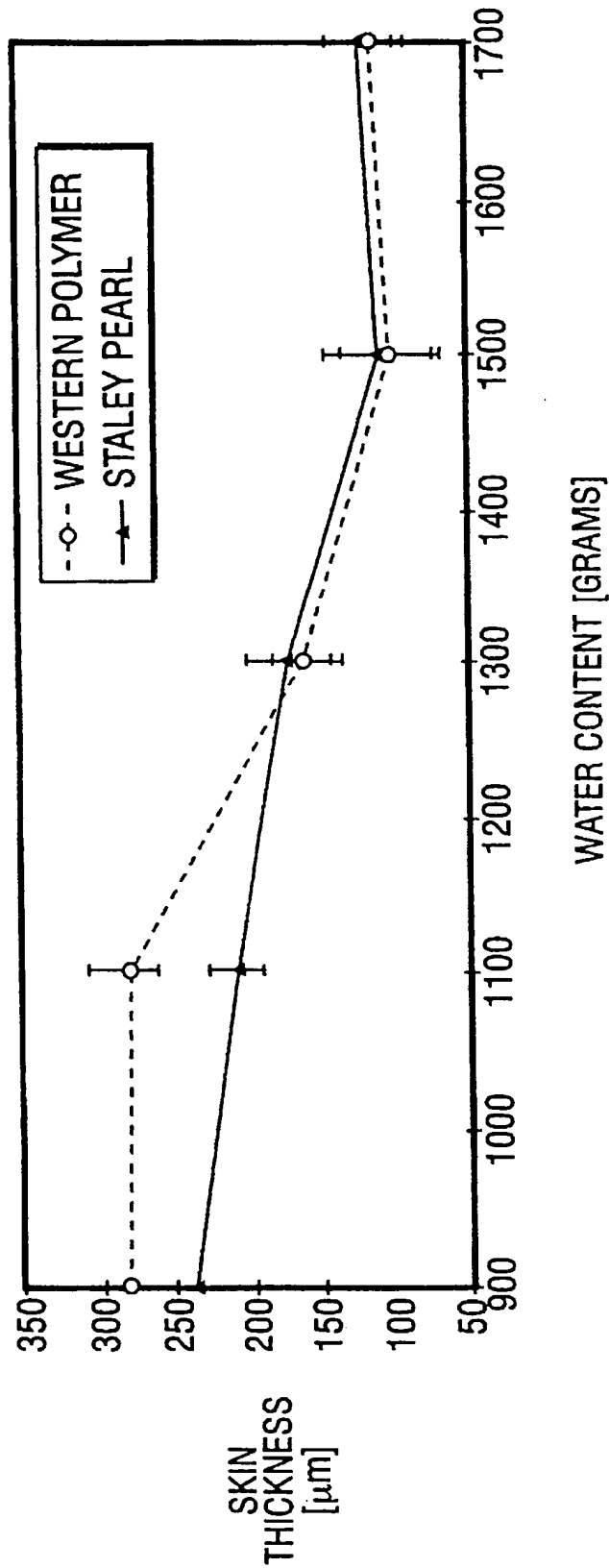


FIG. 26

662060" E85061E60



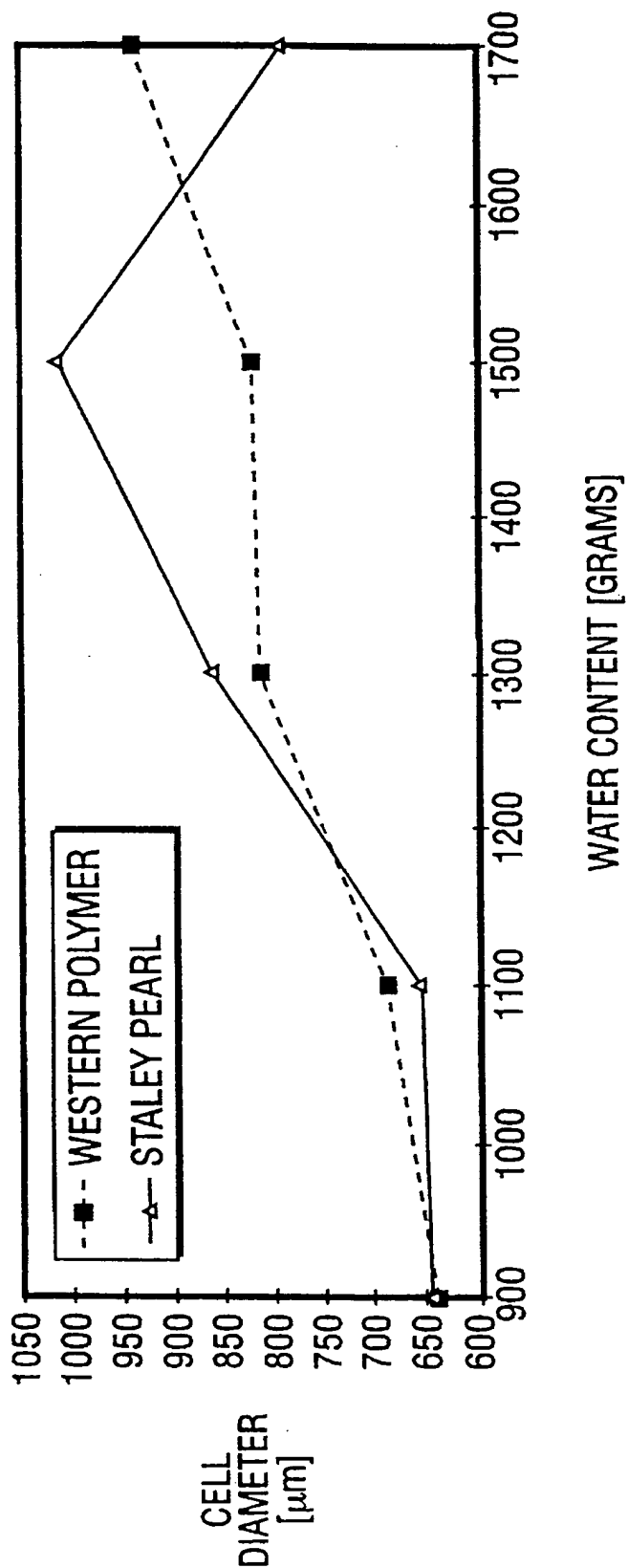


FIG. 27

652060" E3906E60